

ABSTRACT

A vibration damping device that damps vibration produced during the conversion of rotational motion into reciprocal motion. The damping is performed using a simple structure, and the device can be easily downsized. A first converting mechanism and a second converting mechanism are symmetrically arranged with an imaginary plane as a plane of symmetry, a first rotating shaft and a second rotating shaft rotate opposite to each other at a constant speed, and the rotational motion is converted into reciprocal motion by a first crank rod and a second crank rod. As a result, forces in a horizontal direction balance. The total of mass acting on gravity centers of a first balancer and a second balancer is approximately equal to the total of mass reciprocally driven by a first driving shaft and a second driving shaft. Further, both gravity centers are positioned so as to be opposed at 180 degrees to the first driving shaft and second driving shaft across the axes of the first rotating shaft and second rotating shaft. As a consequence, the forces in the direction of an axis can be balanced. Because the forces are balanced, vibration generation is suppressed.